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Vermont Yankee  
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Christopher J. Wamser  
Site Vice President

BVY 15-002

January 6, 2015

10 CFR 50.12  
10 CFR 50.82(a)(8)(i)(A)  
10 CFR 50.75(h)(1)(iv)

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, DC 20555-0001

SUBJECT: Request for Exemptions from 10 CFR 50.82(a)(8)(i)(A) and 10 CFR 50.75(h)(1)(iv)  
Vermont Yankee Nuclear Power Station  
Docket No. 50-271  
License No. DPR-28

- REFERENCES:
1. Letter, Entergy Nuclear Operations, Inc. to USNRC, "Notification of Permanent Cessation of Power Operations," BVY 13-079, dated September 23, 2013 (ML13273A204)
  2. Letter, Entergy Nuclear Operations, Inc. to USNRC, "Update to Irradiated Fuel Management Program Pursuant to 10 CFR 50.54(bb)," BVY 14-085, dated December 19, 2014
  3. Letter, Entergy Nuclear Operations, Inc. to USNRC, "Vermont Yankee Nuclear Power Station Post-Shutdown Decommissioning Activities Report," BVY 14-078, dated December 19, 2014
  4. Letter, Entergy to NRC, "Proposed Change No. 310 - Deletion of Renewed Facility Operating License Conditions Related to Decommissioning Trust Provisions," BVY 14-062, dated September 4, 2014 (ML14254A405)

Dear Sir or Madam:

Pursuant to 10 CFR 50.12, Entergy Nuclear Operations, Inc. (ENO) requests an exemption from 10 CFR 50.82(a)(8)(i)(A) for Vermont Yankee Power Station (VYNPS) to allow use of a portion of the funds from the VYNPS decommissioning trust fund (trust fund) for the management of irradiated fuel, consistent with the VYNPS updated Irradiated Fuel Management Program and Post-Shutdown Decommissioning Activities Report (PSDAR). ENO also requests, pursuant to 10 CFR 50.12, an exemption from 10 CFR 50.75(h)(1)(iv) for the same reason, and also to allow trust fund disbursements for irradiated fuel management activities to be made without prior notice, similar to withdrawals in accordance with 10 CFR 50.82(a)(8).

On September 23, 2013, ENO informed the NRC that VYNPS will permanently cease power operations (Reference 1). Subsequently, by separate letters dated December 19, 2014

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(References 2 and 3), ENO submitted an update to the VYNPS Irradiated Fuel Management Program (10 CFR 50.54(bb)) and a PSDAR (10 CFR 50.82(a)(4)(i)). VYNPS was permanently shutdown on December 29, 2014, and defueling activities are in progress.

The updated Irradiated Fuel Management Program demonstrates the trust fund contains the amount needed to cover the estimated costs of radiological decommissioning and irradiated fuel management activities that are within the scope of this exemption request. However, 10 CFR 50.82(a)(8)(i)(A) states that decommissioning trust funds may be used by licensees if the withdrawals are for expenses for legitimate decommissioning activities consistent with the definition of decommissioning in 10 CFR 50.2.

10 CFR 50.75(h)(1)(iv) similarly requires that trust agreements restrict disbursements (other than for ordinary and incidental expenses) to decommissioning expenses until final decommissioning is completed. However, the operating license for VYNPS includes existing license conditions relating to the decommissioning trust fund that were in effect prior to December 24, 2003, and as such, paragraphs (h)(1) through (h)(3) of the regulations in 10 CFR 50.75 currently do not apply to VYNPS, pursuant to the terms of 10 CFR 50.75(h)(5). In Reference 4, ENO submitted a license amendment request pursuant to 10 CFR 50.90 to delete these license conditions. Since approval of that amendment would result in 10 CFR 50.75(h)(1) through (h)(3) being applicable to VYNPS, an exemption to 10 CFR 50.75(h)(1)(iv), pursuant to 10 CFR 50.12, is requested.

The definition of "decommission" in 10 CFR 50.2 does not include activities associated with irradiated fuel management. Therefore, exemptions from 10 CFR 50.82(a)(8)(i)(A) and 10 CFR 50.75(h)(1)(iv) are needed to allow ENO to use trust funds for irradiated fuel management. The exemptions would only cover those irradiated fuel management activities described in the updated Irradiated Fuel Management Program that will be funded by the trust. Irradiated fuel management activities that are planned to be funded from sources other than the trust fund are not within the scope of this exemption request.

The requested exemptions from 10 CFR 50.82(a)(8)(i)(A) and 10 CFR 50.75(h)(1)(iv) are permissible under 10 CFR 50.12 because they will not present an undue risk to the public health and safety, and application of the regulations in this particular circumstance is not necessary to achieve the underlying purpose of the rule. The updated Irradiated Fuel Management Program demonstrates that the trust fund contains adequate funds to cover not only the estimated costs of radiological decommissioning but also additional funds for the estimated costs for irradiated fuel management activities that are covered by the exemption requests. Therefore, application of 10 CFR 50.82(a)(8)(i)(A) and the provision in 10 CFR 50.75(h)(1)(iv) restricting use of the trust fund is not necessary to ensure adequate funding for radiological decommissioning of VYNPS. Application of the rule would impose an unnecessary burden on ENO to provide additional, unnecessary funding for irradiated fuel management activities.

10 CFR 50.75(h)(1)(iv) further provides that, except for withdrawals being made under 10 CFR 50.82(a)(8) or for payments of ordinary and incidental expenses, no disbursement may be made from the trust fund without written notice to the NRC at least 30 working days in advance. Because disbursements for irradiated fuel management activities would not be made under 10 CFR 50.82(a)(8), this provision would require advance notice prior to any such disbursement. ENO requests an exemption from this provision so that disbursements for irradiated fuel management are treated the same as those for radiological decommissioning. The requested exemption from this provision in 10 CFR 50.75(h)(1)(iv) is permissible under 10 CFR 50.12 because it will not present an undue risk to the public health and safety, and application of the regulation in this particular circumstance is not necessary to achieve the underlying purpose of the rule. The site-specific cost estimate, provided as Attachment 1 to the PSDAR, and updated

Irradiated Fuel Management Program for VYNPS identify the estimated annual expenditures for radiological decommissioning and irradiated fuel management activities, and the annual reporting requirements in recently promulgated 10 CFR 50.82(a)(8)(v) and (vi) will allow continual NRC oversight of the status of the trust fund.

ENO requests approval of this exemption request by June 1, 2015. As discussed in the VYNPS Irradiated Fuel Management Program and PSDAR, ENO plans to begin irradiated fuel management activities shortly after the reactor is defueled. The exemptions are needed in order to allow ENO to use a portion of the funds from the trust fund for these irradiated fuel management activities.

The exemption request is provided in the attachment to this letter.

This letter contains no new regulatory commitments.

Should you have any questions concerning this letter or require additional information, please contact Mr. Philip Couture at 802-451-3193.

Sincerely,



CJW/plc

Attachment: 1. Request for Exemptions from 10 CFR 50.82(a)(8)(i)(A) and 10 CFR 50.75(h)(1)(iv)

cc: Mr. Daniel H. Dorman  
Regional Administrator, Region 1  
U.S. Nuclear Regulatory Commission  
2100 Renaissance Blvd, Suite 100  
King of Prussia, PA 19406-2713

Mr. James S. Kim, Project Manager  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
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Washington, DC 20555

USNRC Resident Inspector  
Entergy Nuclear Vermont Yankee, LLC

Mr. Christopher Recchia, Commissioner  
Vermont Department of Public Service  
112 State Street – Drawer 20  
Montpelier, Vermont 05620-2601

Attachment 1

Vermont Yankee Nuclear Power Station

Request for Exemptions from 10 CFR 50.82(a)(8)(i)(A) and 10 CFR 50.75(h)(1)(iv)

**Vermont Yankee Nuclear Power Station**  
**Request for Exemptions from 10 CFR 50.82(a)(8)(i)(A) and 10 CFR 50.75(h)(1)(iv)**

**I. DESCRIPTION**

Pursuant to 10 CFR 50.12, Entergy Nuclear Operations, Inc. (ENO) requests an exemption from 10 CFR 50.82(a)(8)(i)(A) for Vermont Yankee Power Station (VYNPS) to allow use of a portion of the funds from the VYNPS decommissioning trust fund (trust fund) for the management of irradiated fuel, consistent with the VYNPS updated Irradiated Fuel Management Program and Post-Shutdown Decommissioning Activities Report (PSDAR). ENO also requests, pursuant to 10 CFR 50.12, an exemption from 10 CFR 50.75(h)(1)(iv) for the same reason, and also to allow trust fund disbursements for irradiated fuel management activities to be made without prior notice, similar to withdrawals in accordance with 10 CFR 50.82(a)(8).

On September 23, 2013, ENO informed the NRC that VYNPS will permanently cease power operations (Reference 1). Subsequently, by separate letters dated December 19, 2014 (References 2 and 3), ENO submitted an update to the VYNPS Irradiated Fuel Management Program (10 CFR 50.54(bb)) and a PSDAR (10 CFR 50.82(a)(4)(i)). VYNPS was permanently shutdown on December 29, 2014.

The updated Irradiated Fuel Management Program demonstrates the trust fund contains sufficient funds needed to cover the estimated costs of radiological decommissioning and certain irradiated fuel management activities. However, 10 CFR 50.82(a)(8)(i)(A) states that decommissioning trust funds may be used by licensees if the withdrawals are for expenses for legitimate decommissioning activities consistent with the definition of decommissioning in 10 CFR 50.2. Similarly, 10 CFR 50.75(h)(1)(iv) requires that decommissioning trust agreements provide that disbursements (other than ordinary and incidental expense) are restricted to decommissioning expenses until final decommissioning is completed. The definition of "decommission" in 10 CFR 50.2 does not include activities associated with irradiated fuel management.

10 CFR 50.75(h)(1)(iv) further provides that, except for withdrawals being made under 10 CFR 50.82(a)(8) or for payments of ordinary and incidental expenses, no disbursement may be made from the trust fund without written notice to the NRC at least 30 working days in advance. Because disbursements for irradiated fuel management activities would not be made under 10 CFR 50.82(a)(8), this provision would require advance notice prior to any such disbursement.

Based on the above, ENO has concluded that 10 CFR 50.82(a)(8)(i)(A) and 10 CFR 50.75(h)(1)(iv) would prohibit use of trust funds for activities related to irradiated fuel management prior to completion of radiological decommissioning. As discussed in the VYNPS PSDAR, ENO plans to maintain VYNPS in a safe storage (SAFSTOR) condition for an extended period prior to completion of radiological decommissioning. This will allow radioactive decay to occur, thereby reducing the quantity of contamination and radioactivity that must be disposed of during the decontamination and dismantlement process as well as reducing the associated occupational exposure.

However, the VYNPS PSDAR and updated Irradiated Fuel Management Program contain activities associated with irradiated fuel management that must be accomplished prior to completion of radiological decommissioning. Exemptions from 10 CFR 50.82(a)(8)(i)(A) and 10 CFR 50.75(h)(1)(iv) are requested to allow ENO to withdraw and use trust funds for the irradiated fuel management activities which are planned to be funded by the trust. The

exemptions would only cover those irradiated fuel management activities described in the updated Irradiated Fuel Management Program that will be funded by the trust fund. As explained in Reference 2, ENO plans to fund approximately \$142.8 million (2014 dollars) of the \$368.3 million (2014 dollars) amount estimated for irradiated fuel management activities from two external credit facilities that will be separate from the trust fund. Irradiated fuel management activities that are planned to be funded from the credit facilities (associated with transferring the fuel to dry storage) are not within the scope of this exemption request. The remaining balance of the estimate for irradiated fuel management activities (\$225.5 million, which is equal to \$368.3 million less \$142.8 million, associated with the operation of the spent fuel pool and Independent Spent Fuel Storage Installation) is within the scope of this exemption request. As the trust fund contains the funds needed to complete both radiological decommissioning and the irradiated fuel management activities that are within the scope of this request, these exemptions would not present an undue risk to the public health and safety or prevent decommissioning from being completed as planned.

The operating license for VYNPS includes existing license conditions relating to the decommissioning trust fund that were in effect prior to December 24, 2003, and as such, paragraphs (h)(1) through (h)(3) of the regulations in 10 CFR 50.75 currently do not apply to VYNPS, pursuant to the terms of 10 CFR 50.75(h)(5). In Reference 4, ENO submitted a license amendment request pursuant to 10 CFR 50.90 to delete these license conditions. This exemption request is written based on the anticipated approval of that amendment, which would result in 10 CFR 50.75(h)(1) through (h)(3) being applicable to VYNPS.

## **II. BACKGROUND**

As described in the VYNPS PSDAR, ENO has decided to use the SAFSTOR method of decommissioning, which defers completion of radiological decommissioning until after a storage period, thus delaying (absent an exemption) the availability of excess amounts in the trust fund for irradiated fuel management. The PSDAR includes a site-specific decommissioning cost estimate (provided as Attachment 1 to the PSDAR), which estimates the cost of radiological decommissioning, irradiated fuel management, and site restoration. The updated Irradiated Fuel Management Program includes a cash flow analysis demonstrating that, with credited earnings during the SAFSTOR period, the trust fund contains sufficient funds needed to cover the cost of radiological decommissioning and the irradiated fuel management activities that are within the scope of this exemption request (\$225.5 million).

The cash flow analysis from the updated Irradiated Fuel Management Program is reproduced for convenience in Table 1 below. The analysis shows the beginning and ending trust fund balances and the annual decommissioning costs. The analysis includes a separate annual itemization for license termination (radiological decommissioning) and irradiated fuel management.

**Table 1 - Annual Cash Flow Analysis**

<b>Vermont Yankee Nuclear Power Station - SAFSTOR Methodology</b> <b>Annual Cash Flow Analysis - Total License Termination, Spent Fuel Management less Dry Fuel Costs</b> (In Thousands in 2014 Dollars)		
	Date	Amount
Current Value of Qualified Trust Fund	10/31/2014	\$ 654,925
Current Value of Non-Qualified Trust Fund	10/31/2014	\$ 38
Total Trust Fund Balance as of	10/31/2014	\$ 654,963
Start of Decommissioning	12/29/2014	
Decommissioning Funds value at Calculation Date	10/31/2014	\$ 654,963
Total Estimated Costs at Calculation Date	10/31/2014	\$ 1,042,748

  

0.000%	Cost Escalation Rate	Start of Decom to end of Decom - Assumes 0.0% Decom cost escalation rate
2.000%	Fund Earnings Rate	Start of Decom to end of Decom - Assumes 2.0% Earnings Rate

<b>Vermont Yankee Nuclear Power Station - SAFSTOR Methodology</b> <b>Annual Cash Flow Analysis - Total License Termination, Spent Fuel Management less Dry Fuel Costs</b> (In Thousands in 2014 Dollars)									
Year	<u>Column 1</u> 50.75 License Termination Cost	<u>Column 2</u> 50.54 (bb) Spent Fuel Management Cost	<u>Column 3</u> Exclude Dry Fuel Spent Fuel Management Cost	<u>Column 4</u> License Termination Cost plus Spent Fuel Management Cost less Dry Fuel Cost	<u>Column 5</u> Beginning of Year Trust Fund Balance	<u>Column 6</u> Withdraw	<u>Column 7</u> Contribute	<u>Column 8</u> Trust Fund Earnings	<u>Column 9</u> Year Ending Trust Fund Balance
2014	15,165	4,753	4,753	15,165	654,963	15,165	0	2,183	641,981
2015	81,198	14,319	10,001	85,515	641,981	85,515	0	11,984	568,450
2016	36,126	29,506	7,613	58,018	568,450	58,018	0	10,789	521,221
2017	10,823	49,049	28,873	31,000	521,221	31,000	0	10,114	500,335
2018	9,548	62,330	41,644	30,235	500,335	30,235	0	9,704	479,805
2019	8,173	59,684	39,516	28,342	479,805	28,342	0	9,313	460,776
2020	17,763	20,745	10,420	28,088	460,776	28,088	0	8,935	441,622
2021	5,241	3,996		9,237	441,622	9,237	0	8,740	441,125
2022	5,191	3,996		9,187	441,125	9,187	0	8,731	440,669
2023	5,191	3,996		9,187	440,669	9,187	0	8,722	440,204
2024	3,650	4,007		7,657	440,204	7,657	0	8,728	441,274
2025	3,591	3,996		7,587	441,274	7,587	0	8,750	442,437
2026	3,733	3,996		7,729	442,437	7,729	0	8,771	443,480
2027	3,783	3,996		7,779	443,480	7,779	0	8,792	444,493
2028	3,742	4,007		7,749	444,493	7,749	0	8,812	445,557
2029	3,733	3,996		7,729	445,557	7,729	0	8,834	446,662

Vermont Yankee Nuclear Power Station - SAFSTOR Methodology									
Annual Cash Flow Analysis - Total License Termination, Spent Fuel Management less Dry Fuel Costs (In Thousands in 2014 Dollars)									
Year	Column 1 50.75 License Termination Cost	Column 2 50.54 (bb) Spent Fuel Management Cost	Column 3 Exclude Dry Fuel Spent Fuel Management Cost	Column 4 License Termination Cost plus Spent Fuel Management Cost less Dry Fuel Cost	Column 5 Beginning of Year Trust Fund Balance	Column 6 Withdraw	Column 7 Contribute	Column 8 Trust Fund Earnings	Column 9 Year Ending Trust Fund Balance
2030	3,783	3,996		7,779	446,662	7,779	0	8,855	447,738
2031	3,733	3,996		7,729	447,738	7,729	0	8,877	448,887
2032	3,742	4,007		7,749	448,887	7,749	0	8,900	450,039
2033	3,783	3,996		7,779	450,039	7,779	0	8,923	451,183
2034	3,733	3,996		7,729	451,183	7,729	0	8,946	452,400
2035	3,733	3,996		7,729	452,400	7,729	0	8,971	453,642
2036	3,792	4,007		7,799	453,642	7,799	0	8,995	454,839
2037	3,733	3,996		7,729	454,839	7,729	0	9,019	456,129
2038	3,733	3,996		7,729	456,129	7,729	0	9,045	457,446
2039	3,783	3,996		7,779	457,446	7,779	0	9,071	458,738
2040	3,742	4,007		7,749	458,738	7,749	0	9,097	460,087
2041	3,733	3,996		7,729	460,087	7,729	0	9,124	461,482
2042	3,783	3,996		7,779	461,482	7,779	0	9,152	462,855
2043	3,733	3,996		7,729	462,855	7,729	0	9,180	464,306
2044	3,742	4,007		7,749	464,306	7,749	0	9,209	465,767
2045	3,783	3,996		7,779	465,767	7,779	0	9,238	467,225
2046	3,733	3,996		7,729	467,225	7,729	0	9,267	468,764
2047	3,733	3,996		7,729	468,764	7,729	0	9,298	470,333
2048	3,792	4,007		7,799	470,333	7,799	0	9,329	471,863
2049	3,733	3,996		7,729	471,863	7,729	0	9,360	473,494
2050	3,733	3,996		7,729	473,494	7,729	0	9,393	475,158
2051	3,783	3,996		7,779	475,158	7,779	0	9,425	476,804
2052	3,742	4,007		7,749	476,804	7,749	0	9,459	478,514
2053	3,583	0		3,583	478,514	3,583	0	9,534	484,466
2054	3,633	0		3,633	484,466	3,633	0	9,653	490,487
2055	3,583	0		3,583	490,487	3,583	0	9,774	496,678
2056	3,591	0		3,591	496,678	3,591	0	9,898	502,984
2057	3,633	0		3,633	502,984	3,633	0	10,023	509,375
2058	3,583	0		3,583	509,375	3,583	0	10,152	515,944
2059	3,583	0		3,583	515,944	3,583	0	10,283	522,644
2060	3,641	0		3,641	522,644	3,641	0	10,416	529,419
2061	3,583	0		3,583	529,419	3,583	0	10,553	536,389
2062	3,583	0		3,583	536,389	3,583	0	10,692	543,499



Vermont Yankee Nuclear Power Station - SAFSTOR Methodology									
Annual Cash Flow Analysis - Total License Termination, Spent Fuel Management less Dry Fuel Costs (In Thousands in 2014 Dollars)									
Year	Column 1 50.75 License Termination Cost	Column 2 50.54 (bb) Spent Fuel Management Cost	Column 3 Exclude Dry Fuel Spent Fuel Management Cost	Column 4 License Termination Cost plus Spent Fuel Management Cost less Dry Fuel Cost	Column 5 Beginning of Year Trust Fund Balance	Column 6 Withdraw	Column 7 Contribute	Column 8 Trust Fund Earnings	Column 9 Year Ending Trust Fund Balance
2063	3,633	0		3,633	543,499	3,633	0	10,834	550,700
2064	3,591	0		3,591	550,700	3,591	0	10,978	558,086
2065	3,583	0		3,583	558,086	3,583	0	11,126	565,630
2066	3,633	0		3,633	565,630	3,633	0	11,276	573,273
2067	3,583	0		3,583	573,273	3,583	0	11,430	581,120
2068	43,277	0		43,277	581,120	43,277	0	11,190	549,033
2069	92,030	0		92,030	549,033	92,030	0	10,060	467,064
2070	104,519	0		104,519	467,064	104,519	0	8,296	370,841
2071	84,524	0		84,524	370,841	84,524	0	6,572	292,889
2072	84,953	0		84,953	292,889	84,953	0	5,008	212,944
2073	50,139	0		50,139	212,944	50,139	0	3,757	166,563
2074	512	0		512	166,563	512	0	3,326	169,377
2075	295	0		295	169,377	295	0	3,385	172,466
2076	0	0		0	172,466	0	0	3,449	175,915
	817,219	368,347	142,819	1,042,748		1,042,748	0	563,701	

### Table 1 Definitions:

**Column 1: 50.75 License Termination Cost**

Reflects the Total Annual License Termination Plan cost in 2014 dollars at a 0.0% escalation rate

**Column 2: 50.54 (bb) Spent Fuel Management Cost**

Reflects the Total Annual Irradiated Fuel Management Program cost in 2014 dollars at a 0.0% escalation rate

**Column 3: Exclude Dry Fuel Spent Fuel Management Cost**

Reflects the Dry Fuel - Spent Fuel Management Cost included in Column 2 that is being funded by an external credit facility, in 2014 dollars at a 0.0% escalation rate

**Column 4: License Termination Cost plus Spent Fuel Management Cost less Dry Fuel Cost**

Reflects the Total Annual License Termination Plan cost plus Total Spent Fuel Management Plan cost less Dry Fuel cost all in 2014 dollars at a 0.0% escalation rate (Column 1 + Column 2 - Column 3)

**Column 5: Beginning of Year Trust Fund Balance**

Reflects the beginning of year Trust Fund balance in 2014 dollars at a 0.0% escalation rate and 2.0% Fund Earnings

**Column 6: Withdraw**

Reflects the annual expenditures from the Trust Fund in 2014 dollars at a 0.0% escalation rate (equals Column 4)

**Column 7: Contribute**

Reflects the annual contributions to the Trust Fund in 2014 dollars at a 0.0% escalation rate

**Column 8: Trust Fund Earnings**

Reflects earnings on funds remaining in the trust. A 2.0% Earnings rate is used over a 0.0% cost escalation rate. The Annual 2.0% earnings are calculated on the beginning balance less 50% of the projected annual expenditure for each year. (Column 5 - 50% of Column 6 \* 2.0%)

**Column 9: Year Ending Trust Fund Balance**

Reflects the end of year Trust Fund balance after all projected earnings are added and all projected expenditures are deducted for year end specified at a 0.0% escalation rate and 2.0% Fund Earnings in 2014 dollars. (Column 5 - Column 6 + Column 7 + Column 8)

While this cash flow analysis demonstrates that with earnings, the trust fund is sufficient to cover the estimated costs not only of radiological decommissioning but also the irradiated fuel management activities that are within the scope of the exemption requests, 10 CFR 50.82(a)(8)(i)(A) and 10 CFR 50.75(h)(1)(iv) are an impediment to such use.

10 CFR 50.82(a)(8)(i) states (in part) that decommissioning trust funds may be used by licensees if:

*(A) The withdrawals are for expenses for legitimate decommissioning activities consistent with the definition of decommissioning in Section 50.2;*

10 CFR 50.75(h)(1)(iv) similarly requires that decommissioning trust agreements must provide that disbursements (other than ordinary and incidental expense) are restricted to

decommissioning expenses until final decommissioning is completed. 10 CFR 50.2 provides the following definition:

*Decommission means to remove a facility or site safely from service and reduce residual radioactivity to a level that permits -*

- 1) *Release of the property for unrestricted use and termination of the license; or*
- 2) *Release of the property under restricted conditions and termination of the license.*

NRC staff guidance regarding the regulations discussed above indicates that decommissioning activities do not include irradiated fuel management, which is considered to be an operational activity. (See, e.g., NUREG-1713, "Standard Review Plan for Decommissioning Cost Estimates for Nuclear Power Reactors," pg. 2 ("*Other activities related to facility deactivation and site closure, including operation of the spent fuel storage pool, construction and operation of an independent spent fuel storage installation (ISFSI)... are not included in the NRC definition of decommissioning.*") (Reference 5).

10 CFR 50.75(h)(1)(iv) further provides that except for withdrawals being made under 10 CFR 50.82(a)(8) or for payments of ordinary and incidental expenses, no disbursement may be made from the trust without written notice to the NRC at least 30 working days in advance. Because disbursements for irradiated fuel management activities would not be made under 10 CFR 50.82(a)(8), this provision would require advance notice before disbursements for irradiated fuel management but not for radiological decommissioning. If the NRC grants an exemption allowing the trust fund to be used for both radiological decommissioning and irradiated fuel management, it would be practical to treat both types of disbursements in the same manner, eliminating the need for prior notice once decommissioning has commenced and the expenditures have been identified in the PSDAR and Irradiated Fuel Management Program. The annual reporting requirements in 10 CFR 50.82(a)(8)(v) and (vi) will allow continual NRC oversight of the status of the trust fund thereafter.

### **III. ADJUSTING COST ESTIMATES AND FUNDING LEVELS**

10 CFR 50.82(a)(8)(iv) states the following:

*"For decommissioning activities that delay completion of decommissioning by including a period of storage or surveillance, the licensee shall provide a means of adjusting cost estimates and associated funding levels over the storage or surveillance period."*

As discussed in the VYNPS PSDAR, ENO plans to maintain VYNPS in a safe storage condition for an extended period prior to completion of radiological decommissioning. This will allow radioactive decay to occur, thereby reducing the quantity of contamination and radioactivity that must be disposed of during the decontamination and dismantlement process as well as reducing the associated occupational exposure.

ENO intends to address the requirements of 10 CFR 50.82(a)(8)(iv) with respect to the decommissioning cost estimates and funding levels for VYNPS as discussed below.

#### **A. Means of Adjusting Cost Estimates**

A site-specific decommissioning cost estimate for VYNPS was submitted as an Attachment 1 to the VYNPS PSDAR. 10 CFR 50.82(a)(8)(iv) states that, "For decommissioning activities that delay completion of decommissioning by including a period of storage or surveillance, the licensee shall provide a means of adjusting cost estimates and associated funding levels over the storage or surveillance period." The discussion on the means of adjusting cost estimates is provided in Section 4.1 of the PSDAR and is reproduced below for convenience:

*Costs (excluding low-level waste disposal) are inflated using IHS Global Insight's Index for CPI, Services (CUSASNS). Low-level waste disposal costs are inflated using the IHS Global Insight's Index for CPI, All Urban, All Items (CPI). This index is consistent with the escalation clause in Entergy Corporation's (Entergy) waste disposal contracts with EnergySolutions and Waste Control Specialists. A moving average is used for escalation beyond the available forecasts.*

*Consistent with Regulatory Guide 1.159 (Reference 5), ENVY will update the VYNPS DCE as required. In calculating projected earnings, ENVY will apply a compounded 2% real rate of return on the trust fund.*

#### **B. Means of Adjusting Associated Funding Levels**

The means of adjusting funding levels over the storage period is provided in Section 4.2 of the PSDAR and is reproduced below for convenience:

*In the event that additional financial assurance beyond the amounts contained in the remaining trust fund for VYNPS is required pursuant to NRC regulations to complete radiological decommissioning and spent fuel management at VYNPS, Entergy will provide or (if already existing) increase a parent company guarantee to provide a total in parental assurance of up to 10% of the remaining trust fund balance or \$40 million, whichever is less.*

- 1. Any parent company guarantee provided pursuant to this commitment will comply with applicable NRC requirements in 10 CFR 50.75(e)(1)(iii) and Appendix A to 10 CFR Part 30.*
- 2. Entergy will not modify or withdraw this commitment without prior written NRC consent.*

*ENVY reserves the right to seek approval to use alternative funding mechanisms acceptable to the NRC.*

#### **IV. PRECEDENT**

The proposed changes are consistent with those recently approved for Kewaunee Power Station (Reference 6) and Zion Nuclear Power Station, Units 1 and 2 (10 CFR 50.82(a)(8)(i)(A) - only) (Reference 7).

## **V. JUSTIFICATION FOR EXEMPTION AND SPECIAL CIRCUMSTANCES**

Pursuant to 10 CFR 50.12, the Commission may, upon application by any interested person or upon its own initiative, grant exemptions from the requirements of the regulations of Part 50 which are authorized by law, will not present an undue risk to the public health and safety, and are consistent with the common defense and security. 10 CFR 50.12 also states that the Commission will not consider granting an exemption unless special circumstances are present.

As discussed below, this exemption request satisfies the provisions of 10 CFR 50.12.

### **A. The exemption is authorized by law**

The proposed exemptions from 10 CFR 50.82(a)(8)(i)(A) and 10 CFR 50.75(h)(1)(iv) would allow ENO to use a portion of the funds from the decommissioning trust fund for irradiated fuel management, consistent with the VYNPS updated Irradiated Fuel Management Program and PSDAR. As stated above, 10 CFR 50.12 allows the NRC to grant exemptions from the requirements of 10 CFR Part 50. The proposed exemptions would not result in a violation of the Atomic Energy Act of 1954, as amended, or the Commission's regulations. Therefore, the exemptions are authorized by law.

### **B. The exemption will not present an undue risk to public health and safety**

The underlying purpose of 10 CFR 50.82(a)(8)(i)(A) and 10 CFR 50.75(h)(1)(iv) is to provide reasonable assurance that adequate funds will be available for decommissioning of power reactors within 60 years of cessation of operations. Based on the site-specific cost estimate and the cash flow analysis provided in the updated Irradiated Fuel Management Program, use of a portion of the trust fund for irradiated fuel management activities will not adversely impact ENO's ability to terminate the VYNPS license (i.e. complete radiological decommissioning) within 60 years, consistent with the schedule and costs contained in the VYNPS updated Irradiated Fuel Management Program and PSDAR. Furthermore, an exemption from 10 CFR 50.75(h)(1)(iv) to allow ENO to make withdrawals from the trust fund to cover expenses for irradiated fuel management without prior written notification to the NRC will not affect the sufficiency of funds in the trust fund to accomplish radiological decontamination of the site.

Based on the above, no new accident precursors are created by using the trust fund in the proposed manner. Thus, the probability of postulated accidents is not increased. Also, based on the above, the consequences of postulated accidents are not increased. No changes are being made in the types or amounts of effluents that may be released offsite. There is no significant increase in occupational or public radiation exposure. Therefore, the exemptions will not present an undue risk to the public health and safety.

### **C. The exemption is consistent with the common defense and security**

The proposed exemptions would allow ENO to use a portion of trust funds for irradiated fuel management, consistent with the VYNPS updated Irradiated Fuel Management Program and PSDAR. Irradiated fuel management is an integral part of the planned VYNPS decommissioning process as discussed in the VYNPS PSDAR and will not adversely affect ENO's ability to physically secure the site or protect special nuclear material. This change to enable use of a portion of the funds in the trust fund for irradiated fuel management will not alter the scope of, or availability of sufficient funding

for the VYNPS security program and does not adversely affect the ability to physically secure the site and to protect special nuclear material. Therefore, the proposed exemptions are consistent with the common defense and security.

#### **D. Special Circumstances**

Pursuant to 10 CFR 50.12(a)(2), the NRC will not consider granting an exemption to its regulations unless special circumstances are present. Special circumstances are present as discussed below.

##### **1. Application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule. (10 CFR 50.12(a)(2)(ii))**

The underlying purpose of 10 CFR 50.82(a)(8)(i)(A) and 10 CFR 50.75(h)(1)(iv) is to provide reasonable assurance that adequate funds will be available for decommissioning of power reactors within 60 years of cessation of operations. Strict application of the rule would prohibit withdrawal of funds from the trust fund for activities associated with irradiated fuel management until final radiological decommissioning at VYNPS has been completed. However, the updated Irradiated Fuel Management Program (discussed above) demonstrates that adequate funds are available in the trust fund to complete license termination and irradiated fuel management activities within the scope of this exemption request (\$225.5 million). The updated Irradiated Fuel Management Program cash flow analysis projects that the trust fund will contain \$175.9 million at the end of license termination activities in 2076 (using a 0.0% escalation rate and a 2.0% annual fund growth rate on remaining funds).

The 30-day notification provision in 10 CFR 50.75(h)(1)(iv) was not intended to duplicate other reporting requirements that would exist after a plant commences decommissioning. The underlying purpose of notifying the NRC prior to withdrawal of funds from the trust fund is to provide opportunity for NRC intervention, when deemed necessary, if the withdrawals are for expenses other than those authorized by 10 CFR 50.75(h)(1)(iv) and 10 CFR 50.82(a)(8) that could result in insufficient funds in the trust fund to accomplish radiological decontamination of the site.

During the rulemaking establishing this requirement, a commenter observed that licensees that have complied with the requirements of 10 CFR 50.82(a)(4) regarding submittal of a PSDAR and control disbursements in accordance with the provisions of 10 CFR 50.82(a)(6), (a)(7) and (a)(8) should be exempt from further restrictions on disbursements (67 Fed. Reg. 78332, 78335 (Dec. 24, 2002)) (Reference 8). The NRC agreed with the comment, because requiring notification in such circumstances would not provide any additional assurance that funding is available and would duplicate notification requirements in 10 CFR 50.82. If the NRC grants the requested exemption allowing ENO to use a portion of its trust fund for irradiated fuel management, the same consideration would justify dispensing with the 30-day notification requirement as well. The site-specific cost estimate and updated Irradiated Fuel Management Program identify the estimated annual expenditures, and the annual reporting requirements recently promulgated in 10 CFR 50.82(a)(8)(v) and (vi) will allow continual NRC oversight of the status of the trust fund. Applying the 30-day advance notification requirement in 50.75(h)(1)(iv) to disbursements for irradiated management activities

would duplicate these other reporting requirements and is not necessary to achieve the underlying purposes of the rule.

Therefore, since the underlying purposes of the rules would be achieved by allowing ENO to use the trust fund to fund the activities as discussed in the VYNPS updated Irradiated Fuel Management Program and PSDAR, the special circumstances of 10 CFR 50.12(a)(2)(ii) are present.

**2. Compliance would result in undue hardship or other costs that are significantly in excess of those contemplated when the regulation was adopted, or that are significantly in excess of those incurred by others similarly situated. (10 CFR 50.12(a)(2)(iii))**

The NRC did not intend to prevent the use of these funds solely because they are commingled, and to do so would create an unnecessary financial burden without any corresponding safety benefit. The NRC does not preclude use of funds from the decommissioning trust in excess of those needed for radiological decommissioning for other purposes, such as irradiated fuel management. The NRC has stated that funding for irradiated fuel management may be commingled in the decommissioning trust provided the licensee is able to identify and account for the radiological decommissioning funds separately from the funds set aside for irradiated fuel management (see NRC Regulatory Issue Summary 2001-07, Rev 1, "10 CFR 50.75 Reporting and Recordkeeping for Decommissioning Planning" dated January 8, 2009 (Reference 9), and Regulatory Guide 1.184, Rev 1, "Decommissioning of Nuclear Power Reactors," (Reference 10)). The adequacy of the trust fund to cover both the cost of activities associated with decommissioning and the irradiated fuel management activities within the scope of this request is supported by the updated Irradiated Fuel Management Program cash flow analysis.

If ENO cannot use its trust fund for irradiated fuel management activities, it would be forced to provide additional funding that would not be recoverable from the trust fund until the VYNPS operating license is terminated. To prevent access to the excess funds in the trust would impose an unnecessary and undue burden in excess of that contemplated when the regulation was adopted without any corresponding safety benefit.

Therefore, compliance with the rule would result in an undue hardship or other costs that are significantly in excess of those contemplated when the regulation was adopted, or that are significantly in excess of those incurred by others similarly situated and the special circumstances of 10 CFR 50.12(a)(2)(iii) are present.

## **VI. ENVIRONMENTAL ASSESSMENT**

The proposed exemptions meet the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(25), because the proposed exemptions involves: (i) no significant hazards consideration; (ii) no significant change in the types or significant increase in the amounts of any effluents that may be released offsite; (iii) no significant increase in individual or cumulative public or occupational radiation exposure; (iv) no significant construction impact; (v) no significant increase in the potential for or consequences from radiological accidents; and (vi)(H) the requirements involve surety, insurance or indemnity requirements or other requirements of an administrative nature. Therefore, pursuant to 10 CFR 51.22(b), no environmental impact

statement or environmental assessment need be prepared in connection with the proposed exemptions.

**(i) No Significant Hazards Consideration Determination**

Entergy Nuclear Operations, Inc. (ENO) has evaluated the proposed exemptions to determine whether or not a significant hazards consideration is involved by focusing on the three standards set forth in 10 CFR 50.92 as discussed below:

1. Does the proposed exemption involve a significant increase in the probability or consequences of an accident previously evaluated?

The proposed exemptions would allow ENO to withdraw funds from the VYNPS decommissioning trust fund to conduct activities associated with irradiated fuel management in accordance with the VYNPS Post Shutdown Decommissioning Activities Report (PSDAR) and updated Irradiated Fuel Management Program. The proposed exemptions have no effect on plant structures, systems, and components (SSCs) and no effect on the capability of any plant SSC to perform its design function. The proposed exemptions would not increase the likelihood of the malfunction of any plant SSC. The proposed exemptions would have no effect on any of the previously evaluated accidents in the VYNPS Updated Safety Analysis Report. Use of funds in the trust fund as allowed under the exemptions will not affect the probability of occurrence of any previously analyzed accident. The proposed exemptions do not change the requirements pertaining to irradiated fuel management.

Therefore, the proposed exemptions do not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed exemption create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed exemptions do not involve a physical alteration of the plant. No new or different type of equipment will be installed and there are no physical modifications to existing equipment associated with the proposed exemptions. Similarly, the proposed exemptions will not physically change any SSCs involved in the mitigation of any accidents. Thus, no new initiators or precursors of a new or different kind of accident are created. Furthermore, the proposed exemptions do not create the possibility of a new accident as a result of new failure modes associated with any equipment or personnel failures. No changes are being made to parameters within which the plant is normally operated, or in the setpoints which initiate protective or mitigative actions, and no new failure modes are being introduced.

Therefore, the proposed exemptions do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the proposed exemption involve a significant reduction in a margin of safety?



The proposed exemptions do not alter the design basis or any safety limits for the plant. The proposed exemptions do not impact station operation or any plant SSC that is relied upon for accident mitigation.

Therefore, the proposed exemptions do not involve a significant reduction in a margin of safety.

Based on the above, ENO concludes that the proposed exemptions present no significant hazards consideration, and, accordingly, a finding of "no significant hazards consideration" is justified.

**(ii) There is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite.**

There are no changes in the types, characteristics, or quantities of effluents discharged to the environment associated with the proposed exemptions. There are no materials or chemicals introduced into the plant that could affect the characteristics or types of effluents released offsite. In addition, the method of operation of waste processing systems will not be affected by the exemptions. The proposed exemptions will not result in changes to the design basis requirements of SSCs that function to limit or monitor the release of effluents. All the SSCs associated with limiting the release of effluents will continue to be able to perform their functions. Therefore, the proposed exemptions will result in no significant change to the types or significant increase in the amounts of any effluents that may be released offsite.

**(iii) There is no significant increase in individual or cumulative public or occupational radiation exposure.**

The proposed exemptions do not involve any physical alterations to the plant configuration or any changes to the operation of the facility that could lead to a significant increase in individual or cumulative occupational radiation exposure.

**(iv) There is no significant construction impact.**

No construction activities are associated with the proposed exemptions.

**(v) There is no significant increase in the potential for or consequences from radiological accidents.**

See the no significant hazards considerations discussion in Item (i)(1) above.

**(vi) The requirements from which exemption is sought involve surety, insurance or indemnity requirements or other requirements of an administrative nature.**

The underlying purpose of the requirements from which exemptions are sought is to provide reasonable assurance that adequate funds will be available for decommissioning of power reactors within 60 years of cessation of operations. These requirements provide surety for decommissioning funding.

## **VII. CONCLUSION**

The proposed exemptions would allow ENO to use the VYNPS decommissioning trust fund for the scope of activities described in the PSDAR and for the management of irradiated fuel associated with operating costs, and to make such disbursements in the same manner as withdrawals for radiological decommissioning.

Granting these exemptions will be consistent with the purposes underlying NRC decommissioning regulations as it: (1) would not foreclose release of the site for possible unrestricted use; (2) would not result in significant environmental impacts not previously reviewed by the NRC; and (3) would not undermine the existing and continuing reasonable assurance that adequate funds will be available for decommissioning.

The requested exemptions are authorized by law, will not present an undue risk to the public health and safety, are consistent with the common defense and security, and special circumstances are present as set forth in 10 CFR 50.12(a)(2)(ii) and (iii).

## **References**

1. Letter, Entergy Nuclear Operations, Inc. to USNRC, "Notification of Permanent Cessation of Power Operations," BVY 13-079, dated September 23, 2013 (ML13273A204)
2. Letter, Entergy Nuclear Operations, Inc. to USNRC, "Update to Irradiated Fuel Management Program Pursuant to 10 CFR 50.54(bb)," BVY 14-085, dated December 19, 2014
3. Letter, Entergy Nuclear Operations, Inc. to USNRC, "Vermont Yankee Nuclear Power Station Post-Shutdown Decommissioning Activities Report," BVY 14-078, dated December 19, 2014
4. Letter, Entergy to NRC, "Proposed Change No. 310 - Deletion of Renewed Facility Operating License Conditions Related to Decommissioning Trust Provisions," BVY 14-062, dated September 4, 2014 (ML14254A405)
5. NUREG-1713, "Standard Review Plan for Decommissioning Cost Estimates for Nuclear Power Reactors," dated December 2004
6. Letter, NRC to Dominion Energy Kewaunee, Inc., "Kewaunee Power Station - Exemptions from the Requirements of 10 CFR 50, Section 50.82(a)(8)(i)(A) and Section 50.75(h)(1)(iv) (TAC No. MF1438)," dated May 21, 2014 (ML13337A287)
7. Letter, NRC to ZionSolutions LLC, "Zion Nuclear Power Station, Units 1 and 2 - Request for Exemption from Certain Decommissioning Trust Fund Requirements of the Decommissioning Regulations (TAC Nos. J52941 and J52942)," dated July 21, 2014 (ML14030A590)
8. Federal Register Notice, Vol. 67, No. 247, Decommissioning Trust Provisions, dated December 24, 2002

9. NRC Regulatory Issue Summary 2001-07, Rev 1, "10 CFR 50.75 Reporting and Recordkeeping for Decommissioning Planning," dated January 8, 2009 (ML083440158)
10. Regulatory Guide 1.184, Rev 1, "Decommissioning of Nuclear Power Reactors," (ML13144A840)